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REMARKS

Claims 32-42 are pending, of which Claims 32 and 35-42 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,938,732 to Lim et al. ("Lim"). Claims 33-34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lim in view of U.S. Patent No. 6,178,439 B1 to Feit ("Feit"). This application has been carefully considered in connection with the Examiner's Action. Reconsideration and allowance of the above-referenced application are respectfully requested in light of the following remarks.

Claim 32 was rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,938,732 to Lim. Specifically, independent Claim 32 was rejected as being anticipated by the recitation that "each host periodically sends a 'control message' to all other hosts within the group" (col. 3, lines 30-37). Claim 32 is also anticipated by the recitation that a "total host failure is detected if no heartbeat signal occurs within a timeout interval" (col. 8, lines 23-35) and the recitation that "each host within a service group periodically sends control (or info) messages to the service group via the service group address" (col. 5, lines 66-67 and col. 6, lines 1-6).

The Examiner states that Lim et al. do not specifically disclose sending directly to one or more selected servers, as is recited in Claim 32. The Applicant agrees with the Examiner. The Examiner also states "Lim et al. disclose broadcast to servers (col. 5, lines 21-29) (Office Action, par. 5, page 2)." Lim reads as follows:

To maintain coordination among the various members of the service group, a "service group address" is established, which is simply an IP address for that group. All members of the service group communicate with each other using the service group address—that is, each member transmits messages to all other group members by addressing the message to the service group address, and each member receives messages from all other service group members by receiving messages destined to the service group address. (Column 5, lines 21-29).

The Office Action states that "It would have been obvious to one of ordinary skill in the art at the time the invention was made to include sending directly to servers because it is well known in the art that broadcasting is defined as the sending of information directly from one specific computer within a network segment to [an]other computer in that segment." (Office Action, pages 2-3.) The

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Office Action also states that "the term 'broadcasting' is defined as the sending of information directly from one specific computer within a network segment to [an]other computer in that segment." [emphasis in original] (Office Action, page 5).

The Applicant respectfully traverses the statement that "it is well known in the art that broadcasting is defined as the sending of information directly from one specific computer within a network segment to [an]other computer in that segment", and requests that it be supported. Furthermore, the Examiner has stated that broadcasting is *defined* as the sending of information directly from one specific computer to another specific computer. The Applicant respectfully requests that the Examiner cite to specificity this definition within Lim et al.

Lim refers specifically to broadcasting [emphasis added].

To maintain coordination among the various members of the service group, a new IP address referred to as a service group address 105 is established for each service group, and is typically an IP multicast address and a port number. All hosts 10, or members, within a service group 100 communicate with one another using the service group address 105, that is, each member transmits messages to all other group members by addressing the message to the service group address, and each member receives messages from all other service group members by receiving messages destined to the service group address. These messages, which may be thought of as control messages, are typically *broadcast* on a periodic basis by each host using a protocol such as UDP and communicate a variety of data. (Column 9, lines 22-34).

However, this broadcast to the members of the service group is a broadcast through use of a *multicast* address. The multicast address data is forwarded to the leader of the service group, and then this data is forwarded to individual members of the multicast group. This is not the "sending, directly to one or more selected servers ..." of independent Claim 32. Instead, in Lim, messages are sent to the service group IP address, and from there are sent to the members of the group. In other words, although arguably in Lim the messages are sent from one member to another, the messages are sent indirectly through employment of a proxy address, not directly from member to member. In view of the foregoing, it is apparent that the cited reference does not teach, suggest or render obvious the unique combination now recited in Claim 32. It is therefore submitted that Claim 32, as discussed with the Examiner during the January 6, 2003 telephone interview, clearly and precisely

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distinguishes over the cited art in a patentable sense and is therefore allowable over those references and the remaining references of record. Accordingly, it is respectfully requested that the rejection of Claim 32 under 35 U.S.C. § 102(e) as being anticipated by Lim be withdrawn.

Claims 35 and 36 have also been rejected under 35 U.S.C. § 102(e) as being anticipated by Lim. Specifically, the element in dependent Claims 35 and 36 of "generating a message by the selected computer in accordance with the heartbeat protocol to indicate unavailability of the one or more computer resources" is rejected as being anticipated by the recitation in Lin et al. that:

[A] total failure is detected if no heartbeat signal occurs within a timeout interval. The frequency of transmission of the info message/heartbeat and the timeout interval may be adjusted by the operator to optimize system operation. Additionally, a host may experience service failures, which occur when a host can no longer provide a service due to partial failure. These failures may be transient or persistent, and may involve software or hardware failures such as resource exhaustion or corrupted data, among others. (Column 8, lines 26-35.)

However, Lim is not generating a message by the selected computer. Instead, if the heartbeats of Lim stop, a failure is detected. However, in Claim 35, a message is generated "by the selected computer in accordance with the heartbeat protocol to indicate unavailability of the one or more computer resources." (See page 16, lines 23-26 of the present Application).

The Office Action stated that "generating a message by the selected computer in accordance with the heartbeat protocol to indicate unavailability of one or more computer resources" refers to "the client to inform the server of scheduled or expected periods of unavailability" (Office Action, 16(2), page 5), which is a partial quote from a previous Amendment filed June 17, 2002. A fuller reading from that Amendment is as follows:

Regarding Claims 35 and 36, "Applicant respectfully submits that the cited claim language refers to the recitation in the specification of 'the client sends an explicit message (deactivateDTG) to tell the name server to change the state of the DTG to inactive,' (page 16, lines 23-26) in the original application. This feature of Applicant's invention allows the client to inform the server of scheduled or expected periods of unavailability, rather than

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waiting for the server to discover unavailability from the lack of heartbeat messages.”
(Amendment of June 6, 2002, pages 5-6).

The Office Action also states that the Applicant's argument is not found in the claim. The Applicant respectfully states that the Examiner has misconstrued the purpose of the previous quote from the Amendment of June 6, 2002. This quotation is generally directed to showing some advantages of the claim. The claim language itself refers to “generating a message by the selected computer in accordance with the heartbeat protocol to indicate unavailability of one or more computer resources,” which does not teach, show or suggest this limitation. Allowing the client to inform the server of scheduled or expected periods of unavailability is a feature of the Applicant's invention, but is not explicitly recited in the claim language of Claims 35 and 36. Unavailability is claimed in Claims 35 and 36, and that could be future unavailability. However, future unavailability is not required to overcome Lim. Lim does not generate a message of unavailability, future or otherwise.

The Examiner has stated that she “cannot read the claim language as applicant's argument. The claim language is interpreted as “a message is generated *only* to indicate the unavailability of the computer resources.” [emphasis in original] (Office Action, page 6, paragraph 17.) Applicant is unable to determine what is meant by this statement of the Examiner. The Applicant does not presently recite the limitation of “only” in Claims 35 and 36, and the term “only” should not be read into the claims.

Claim 37 has also been rejected under 35 U.S.C. § 102(e) as being anticipated by Lim. Claim 37 is rejected in view of Lin for disclosing “determining from the presence or absence of the heartbeat messages that all computer resources are available or unavailable (Column 8, lines 25-28).” (Office Action, par. 7, page 3.) However, Claim 37 as amended reads as “*directly* receiving heartbeat messages *sent* by a single computer, the heartbeat messages indicating the availability of resources of a plurality of computers, such that the loss of heartbeat from the selected computer is indicative that all computer resources are unavailable, and the presence of a heartbeat from the selected computer is indicative that all computer resources are available.” Support for this amendment can be found, among other places, in the present application, on page 12, line 25 to page

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13, line 11.

Claims 38-42 have also been rejected under 35 U.S.C. § 102(e) as being anticipated by Lim. Claims 38-42 depend from and further limit independent Claim 37 in a patentable sense, and, for this reason and the reasons set forth above, are also deemed to be in condition for allowance. Accordingly, it is respectfully requested that the rejections of dependent Claims 38-42 be withdrawn, as well. For the foregoing reasons and for other reasons clearly apparent, Applicants respectfully request full allowance of Claims 38-42.

In view of the foregoing, it is apparent the cited reference, either singularly or in any combination, does not teach, suggest or render obvious the unique combination now recited in Claim 37, or its dependent claims. It is therefore submitted that Claim 37 and its dependent claims clearly and precisely distinguish over the cited art in a patentable sense and are therefore allowable over that reference and the remaining references of record. Accordingly, in light of the amendments made solely to distinguish Applicant's invention from the prior art, it is respectfully requested that the rejection of Claim 37-42 under 35 U.S.C. § 102(e) as being anticipated by Lim be withdrawn.

Claims 33 and 34 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Lim in view of U.S. Patent No. 6,178,439 B1 to Feit ("Feit"). Claims 33-34 depend from and further limit independent Claim 32 in a patentable sense, and, for this reason and the reasons set forth above, are also deemed to be in condition for allowance. Accordingly, it is respectfully requested that the rejections of dependent Claims 33-34 be withdrawn, as well. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests full allowance of Claims 33-34. The arguments of the Examiner are thereby rendered moot.

In view of the foregoing, it is apparent that none of the cited references, either singularly or in any combination, teach, suggest or render obvious the unique combination now recited in Claims 33 and 34. It is therefore submitted that Claim 33 clearly and precisely distinguishes over the cited combinations in a patentable sense and are therefore allowable over those references and the remaining references of record. Accordingly, it is respectfully requested that the rejection of Claims 33 and 34 under 35 U.S.C. § 103(a) as being rendered obvious by Lim in view of Feit be withdrawn.

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Applicant does not believe any fees are due in connection with the filing of this paper; however, in the event any fees are due, the Commissioner is hereby authorized to charge any required fees due (other than issue fees), and to credit any overpayment made, in connection with the filing of this paper to Deposit Account No. 50-0605 of Carr Law Firm, L.L.P.

Applicant has now made an earnest attempt to place this application in condition for allowance. Therefore, Applicant respectfully requests, for the reasons set forth herein and for other reasons clearly apparent, full allowance of Claims 32-42.

Should the Examiner have any questions or desire clarification of any sort, or deem that any further amendment is desirable to place this application in condition for allowance, the Examiner is invited to telephone the undersigned at the number listed below.

Respectfully submitted,

Dated: 1-7-03By: 

Ted Shiells, Reg. No. 31,569
Attorney for Applicant

Carr Law Firm, L.L.P.
670 Founders Square
900 Jackson Street
Dallas, Texas 75202
Telephone: (214) 760-3030
Fax: (214) 760-3003

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AMENDMENT
VERSION WITH MARKINGS TO SHOW CHANGES MADE

37. (Amended) A method for implementing a heartbeat protocol, comprising:
directly receiving heartbeat messages [generated] sent by a single selected computer, the heartbeat messages indicating the availability of resources on one or more computers, such that loss of heartbeat from the selected computer is indicative that all computer resources are unavailable, and the presence of a heartbeat from the selected computer is indicative that all computer resources are available.